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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,392	11/08/2001	Graham Smith	00167-441001	5656

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12/05/2002

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EXAMINER

PHANIPHAND, GWEN G

ART UNIT

PAPER NUMBER

3731

DATE MAILED: 12/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,392

Applicant(s)

SMITH, GRAHAM

Examiner

Gwen Phanijphand

Art Unit

3731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/08/01.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections – 35 U.S.C. 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,149,669 to Li in view of U.S. Patent No. 6,066,160 to Colvin et al.

Regarding claim 1, Li discloses in col. 1, ll. 22-25 an anchor configured to be retained within bone with an aperture for coupling a flexible member to the anchor (Fig. 2; element 63). Li does not disclose a means of restricting the flexible member in a direction. Colvin et al., however, disclose in Fig. 1 a means (20) of restricting the movement of a flexible member, such that the flexible member moves through the anchor body in a first direction while movement in a second opposite direction is restricted (col. 8, ll. 62-64). Colvin et al. also disclose that this means of restricting a flexible member may be incorporated into anchor bodies used in the bone (col. 4, ll. 10-18). This is advantageous because it allows the surgeon to adjust the tension of the flexible member in small increments, without tying knots or removing the suture. It would have been obvious to one having ordinary skill in the art at the time of the invention to replace the flexible member aperture of the Li with the aperture of Colvin et al., which comprises a means of restricting the flexible member. The aperture of Colvin et al. still holds the flexible member and also comprises a means of restricting the flexible member, allowing

Art Unit: 3731

the flexible member to be adjusted in increments without ties or knots that are not suitable in certain tissues. This means of restriction creates versatility for terminating sutures and securing tissue anchors in place.

Regarding claim 2, Colvin et al. disclose in Fig. 1 a restrictor (ridges, 20) in the aperture of the modified bone anchor configured to engage the flexible member and selectively restrict movement of the flexible member (col. 8, ll. 62-64).

Regarding claim 3, Colvin et al. disclose the restrictor of the modified bone anchor configured to engage the flexible member at a substantially arbitrary position along the length of the flexible member (col. 4, ll. 57-63). It is at the surgeon's discretion to decide where to engage the flexible member, restricting its length in one direction.

Regarding claim 4, Colvin et al. disclose in Fig. 1 an opening or aperture (14A) of the modified bone anchor through which the flexible member can be moved.

Regarding claim 5, Colvin et al. disclose in Fig. 1 a restrictor (20) of the modified bone anchor configured to engage the flexible member and to selectively restrict passage of the flexible member through the opening (col. 8, ll. 62-64).

Regarding claim 6, Colvin et al. disclose in Fig. 1 the restrictor (20) of the modified bone anchor, defining at least a part of the opening. The ridges are formed on the aperture and protrude toward the opening (col. 4, ll. 57-59).

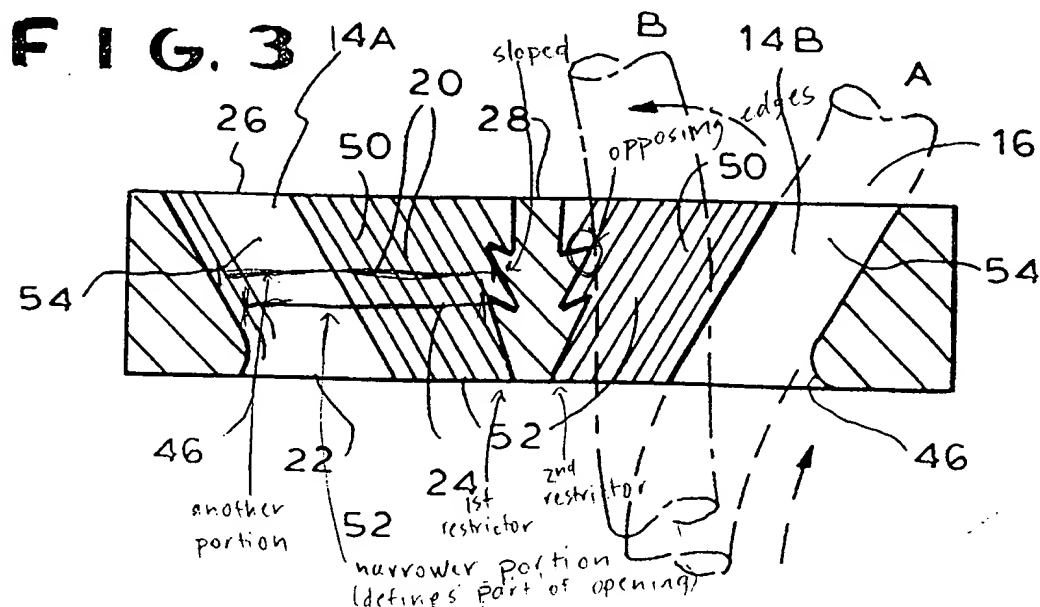
Regarding claim 7, Colvin et al. disclose in Fig. 1 the restrictor (20) of the modified bone anchor, defining a narrower portion of the opening than another portion of the opening. The ridges, which are formed on the aperture, point and extend inward (Fig. 3) creating a narrower portion than in another portion.

Regarding claim 8, Colvin et al. disclose in Fig. 3 the restrictor (20) of the modified bone anchor, including a sloped surface configured to compress the flexible member to permit passage of the flexible member through the opening (col. 8, ll. 58-64).

Regarding claim 9, Colvin et al. disclose in Fig. 3 the restrictor (20) of the modified bone anchor, including opposing edges for engaging the flexible member to restrict passage of the flexible member through the opening (col. 8, ll. 58-64).

Regarding claim 10, Colvin et al. disclose in Fig. 2 a second restrictor (20) of the modified bone anchor, which is located on aperture 14B and configured to engage the flexible member to selectively restrict passage of the flexible member through the opening (col. 8, ll. 58-64).

Regarding claim 11, Colvin et al. disclose the restrictors are oppositely directed. (col. 5, ll. 24-38). Colvin et al. explain that the first direction of the first aperture and the second direction of the second aperture are directed upwards. This means that the first direction of the second aperture is directed downwards, which is the opposite direction of the first direction of the first aperture.



Regarding claim 12, Li discloses in Figs. 1A and 2 the anchor body including a pair of legs (48).

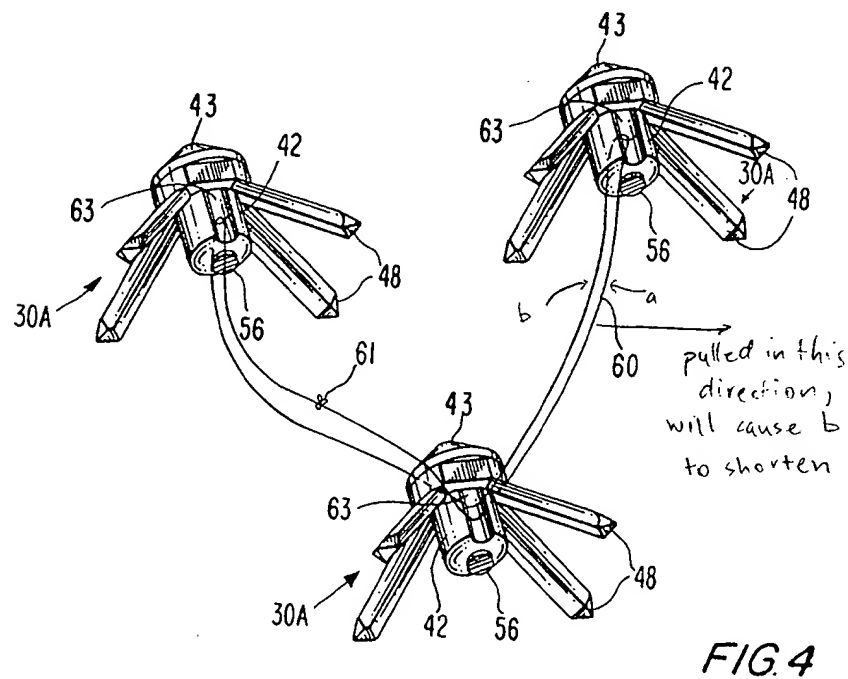
Regarding claim 13, Li discloses in Fig. 10 the anchor body including a bone-engaging ridge (49) for retaining the bone anchor in a bone hole (50).

Regarding claim 14, Li discloses in Fig. 2 the anchor body comprising a unitary body.

Regarding claim 15, Li discloses in Fig. 2 the anchor body including a post (42) about which the flexible member is positionable.

Regarding claims 16, 17, 18, and 19, Li discloses in Fig. 10 a system comprising first and second anchor bodies that include members (49) to retain the anchors in the bone (54). The first and second anchor bodies also define apertures (Fig. 2: element 63) for receiving a suture or flexible member (60), which in Fig. 10 couples the first and second anchor bodies. In Fig. 4, one strand of the flexible member or suture (60) can be pulled, and this will shorten the length of the other strand of the flexible member between the bone anchors (see strands a and b in Fig. 4 inserted below). Li does not disclose a restrictor that forms a one-way passage through the opening. Colvin et al., however, disclose in Fig. 1 an aperture with a means (20) of restricting the movement of a flexible member coupled thereto, such that the flexible member moves through the anchor body in a first direction while movement in a second opposite direction is restricted (col. 8, ll. 62-64). Colvin et al. state that this means of restricting a flexible member can be incorporated into anchor bodies used in the bone (col. 4, ll. 10-18). This means of restricting movement of a flexible member is advantageous because it allows the surgeon to adjust the tension on the flexible member in small increments, without tying knots or

removing the suture. It would have been obvious to one having ordinary skill in the art at the time of the invention to replace the flexible member aperture of Li with the aperture of Colvin et al., which further comprises a means of restricting the flexible member. The aperture holds the flexible member (suture) and the means of restricting the flexible member allows the flexible member to be adjusted in increments without ties or knots that are not suitable in certain tissues. Placement of the means of restricting in both anchor bodies creates one-way passages through which the suture that couples the first and second anchor bodies extends. This means of restriction creates versatility for terminating sutures and securing tissue anchors in place.



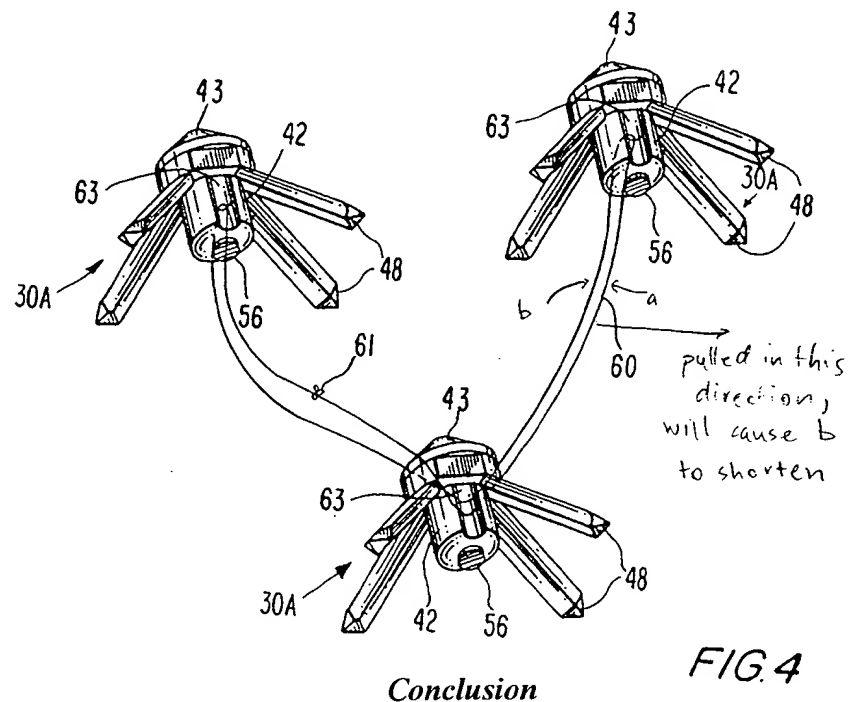
Regarding claim 20, Colvin et al. disclose in Fig. 1 a restrictor (20) of the modified anchor, defining the one-way passage (col. 8, ll. 62-64).

Regarding claim 21, Colvin et al. disclose in Fig.3 the restrictor (20) of the modified anchor, including a sloped surface configured to compress the suture to permit passage of the suture through the one-way passage (col. 8, ll. 58-64).

Regarding claim 22, Colvin et al. disclose in Fig. 3 the restrictor (20) of the modified anchor, including opposing edges for engaging the flexible member to restrict passage of the flexible member through the one-way passage (col. 8, ll. 58-64).

Regarding claims 23 and 24, Li disclose in Fig. 5A first and second anchors that are retained in the bone (54). The first and second anchors define apertures for a flexible member. The apertures of Li do not comprise restrictors, which allow the movement of a flexible member in the first direction and restrict the movement of the flexible member in a second, opposite direction. Colvin et al. disclose in Fig. 3 a restrictor (20) defining an opening having a first portion for permitting passage of a member therethrough and second portion restricting the passage in a second opposite direction (col. 8, ll. 62-64). Colvin et al. state that this means of restricting a flexible member by the restrictor can be incorporated into anchor bodies used in the bone (col. 4, ll. 10-18). The restrictor is advantageous because it allows the surgeon to adjust the tension on the flexible member in smaller increments, without removing the suture or tying knots. It would have been obvious to one having ordinary skill in the art at the time of the invention to improve the anchor bodies of Li by replacing the flexible member aperture of each anchor body with the aperture comprising a restrictor of Colvin et al. The aperture holds the flexible member (suture) and further comprises a means of restricting the flexible member, allowing the flexible member to be adjusted in increments without ties or knots that are not suitable in certain tissues.

Regarding claim 25, Li discloses in Fig. 5A a second anchor in the bone (54). The second anchor is coupled to the first anchor by a flexible member (60). In Fig. 4, if one strand of the flexible member is pulled in a first direction (e.g. away from the other strand), the length of the flexible member between the anchors may be shortened.



Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,669,935 to Rosenman et al.

U.S. Patent No. 5,391,173 to Wilk

U.S. Patent No. 6,306,159 B1 to Schwartz et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwen Phanijsphand whose telephone number is 703-305-4845. The examiner can normally be reached on Mon-Fri.

Art Unit: 3731

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Milano can be reached on 703-308-2496. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3590 for regular communications and 703-305-3590 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0858.

GP

November 23, 2002

Gwen Phanijphand

Patent Examiner

Art Unit 3731



Michael J. Milano

Supervisory Patent Examiner

Technology Center 3700